

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte FRANCOIS DELMAS

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Appeal No. 1998-1995  
Application No. 08/554,754

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HEARD: March 22, 2001

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Before KIMLIN, PAK, and WALTZ, Administrative Patent Judges.  
PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 6 and 8 through 22, all of the claims pending in the above-identified application.

According to appellant (Brief, pages 2 and 3), the claims on appeal are grouped as follows:

Group I - Claims 1 through 6, 8, 10, 15 through 17 and 20;  
Group II - Claim 9;  
Group III - Claims 11 through 14;  
Group IV - Claim 18;  
Group V - Claims 19 and 21; and

Group VI - Claim 22.

Therefore, we select claims 15, 9, 11, 18, 19 and 22 from the above-mentioned groups and decide the appeal as to the grounds of rejection set forth below on the basis of these claims alone. See 37 CFR § 1.192 (c)(7) (1995). Claims 1, 9, 11, 15, 18, 19 and 22 are reproduced below:

1. A process for the removal of contaminating amounts of iodine values from an aqueous solution of alkali metal chloride comprised thereof, which comprises converting said iodine values into molecular iodine and then adsorbing such molecular iodine onto active carbon, the external surface area of said active carbon having been oxidized.

9. The process as defined by Claim 1, the aqueous solution of alkali metal chloride thus purified comprising from 0.2 to 0.5 mg/l of iodine values.

11. The process as defined by Claim 10, comprising regenerating said active carbon by contacting same with a solvent for iodine.

15. A process for the removal of contaminating amounts of molecular iodine values from an aqueous solution of alkali metal chloride comprised thereof, which comprises adsorbing such molecular iodine values onto active carbon, the external surface area of said active carbon having been oxidized.

18. The process as defined by Claim 1, the aqueous solution of alkali metal chloride thus purified comprising less than 0.05 mg/l of iodine values.

19. A process for the removal of contaminating amounts of iodine values from an aqueous solution of alkali metal, comprising the steps of:

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(a) providing an aqueous solution of alkali metal containing iodine values;

(b) maintaining the aqueous solution at a pH lower than 3;

(c) oxidizing the iodine values with an oxidizing agent selected from the group consisting of active chlorine, hydrogen peroxide, an iodate and a periodate;

(d) measuring the redox potential of the aqueous solution and adjusting the rate of addition of the oxidizing agent to maintain the redox potential between 460 and 560 mV/SCE, measured at 50°C, thereby forming molecular iodine; and

(e) removing molecular iodine from the aqueous solution of step (d) by passing the aqueous solution over a bed of active carbon having an oxidized surface, the flow rate of said aqueous solution over said bed being at least 3 bed volumes per hour.

22. The process according to claim 1, wherein said absorbing of molecular iodine onto active carbon is at 50°C or less.

#### PRIOR ART

In support of her rejections, the examiner relies on the following prior art references:

Ellinger 1926	1,604,153	Oct. 26,
Girvin 1930	1,774,882	Sep. 2,
Chamberlain 1933	1,922,693	Aug. 15,
Urbain et al. (Urbain) 1941	2,246,645	Jun. 24,
Filippone et al. (Filippone) 3, 1991	5,069,884	Dec.

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The Board of Patent Appeals and Interferences newly  
relies on the following prior art reference:

Kirk-Othmer, *Encyclopedia of Chemical Technology*, Volume 4,  
John Wiley & Sons, New York (1978), pp. 561-563, copy attached  
to this decision (hereinafter referred to as "Kirk-Othmer")

#### REJECTION

The appealed claims stand rejected as follows<sup>1</sup>:

- 1) Claim 22 under 35 U.S.C. § 112, first paragraph, as  
lacking written descriptive support in the application as  
originally filed for the subject matter presently claimed;
- 2) Claims 1 through 6, 8 through 10, 15 through 18, 20 and  
22 under 35 U.S.C. § 103 as unpatentable over Chamberlain and  
Urbain;
- 3) Claims 11 through 14 under 35 U.S.C. § 103 as  
unpatentable over Chamberlain in view of Ellinger and Girvin;  
and

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<sup>1</sup> The examiner has withdrawn the rejection of claim 22  
under 35 U.S.C. § 112, second paragraph, as being indefinite.  
See Answer, page 3.

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4) Claims 19 and 21 under 35 U.S.C. § 103 as unpatentable over Chamberlain in view of Urbain and Filippone.

OPINION

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the examiner and appellant in support of their respective positions. This review leads us to conclude that the examiner's §§ 112 and 103 rejections are well founded. Accordingly, we will sustain the examiner's §§ 112 and 103 rejections. However, since our reasons for affirming the examiner's § 103 rejections are materially different from those offered by the examiner, we denominate our affirmance as including new grounds of rejection. Our reasons for these determinations follow.

35 U.S.C. § 112, first paragraph

Claims 22 stands rejected under 35 U.S.C. § 112, first paragraph, as lacking written descriptive support in the application as originally filed for the subject matter presently claimed. See Answer, page 4. The examiner finds that the original disclosure of the application does not

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describe the "temperatures less than 50<sup>[o]</sup>C." recited in claim

22. ***Id.***

As the court stated in ***In re Kaslow***, 707 F.2d 1366, 1375,  
217 USPQ 1089, 1096 (Fed. Cir. 1983):

The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.

Although the claimed invention does not necessarily have to be expressed in ***ipsis verbis*** in order to satisfy the written description requirement (***see In re Wertheim***, 541 F.2d 257, 265, 191 USPQ 90, 98 (CCPA 1976)), it is nonetheless necessary that the written description of the application must clearly allow persons of ordinary skill in the art to recognize that the applicant invented what is claimed (***In re Gosteli***, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989)). The fact that one skilled in the art might realize from reading a disclosure that something is possible is not a sufficient indication to that person that the something is a part of the applicant's disclosure. ***See In re Barker***, 559 F.2d 588, 593,

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194 USPQ 470, 474 (CCPA 1977), **cert. denied**, 434 U.S. 1064, 197 USPQ 271 (1978). "One shows that one is 'in possession' of the invention by describing the invention with all its limitations, not that which makes it obvious..." **Lockwood v. American Airlines Inc.**, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Precisely how close the original description must be to the later claimed subject matter to comply with the written description requirement is determined on a case-by-case basis.

In the present case, we agree with the examiner that the original disclosure of the application does not reasonably convey to one of ordinary skill in the art the limitation "said absorbing of molecular iodine onto active carbon is at 50°C **or less**" newly recited in claim 22. We find that the original disclosure exemplifies an iodine contaminant removing process wherein molecular iodine is absorbed onto active carbon only at a temperature of 50°C. See specification, pages 7 and 8, examples 1 and 2. There are no other temperatures utilized or implicitly or explicitly described as

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the absorption temperatures of the claimed process in the original disclosure.

To remedy this deficiency in the written description of the original disclosure, appellant alleges (Brief, page 4) that:

[O]ne of skill in this art recognizes that a process for removing iodine from aqueous solution is performed at temperature above freezing. Hence, at the time the subject application was filed, one of skill in the art would appreciate that the disclosure describes a process which can be performed at 50°C or less.

This allegation is not convincing for two reasons. First, we find that appellant does not refer to any evidence to support his assertion that "one of ordinary skill in the art recognizes that a process for removing iodine from aqueous solution is performed at [any] temperature above freezing." Second, there is no basis to conclude that one of ordinary skill in the art would have read into the original disclosure the iodine absorption temperatures employed in conventional iodine removal processes as the iodine absorption temperatures of the claimed process which, according to appellant, is patentably different from those conventional processes. It is possible that the use of conventional absorption temperatures



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in the claimed process may have been obvious to one of ordinary skill in the art. However, as indicated *supra*, obviousness is not a substitute for the implicit or explicit description in the original disclosure. Appellant also argues that the original claim limitation "process for the removal of contaminating amounts of iodine values from an aqueous solution of alkali metal chloride..." supports the newly recited iodine absorption temperature of 50°C or less. We do not agree. When that original claim limitation is read in light of the original disclosure, as it must be, it reasonably conveys to one of ordinary skill in the art that the claimed removal of iodine contaminants from an aqueous solution of alkali metal chloride is carried out at 50°C.

In view of the foregoing, we affirm the examiner's decision rejecting claim 22 under 35 U.S.C. § 112, first paragraph.

35 U.S.C. § 103

In rejecting claims 1 through 6, 8 through 10, 15 through 18, 20 and 22 under 35 U.S.C. § 103, the examiner relies on Chamberlain and Urbain. Filippone is relied on additionally to reject claims 19 and 21 under 35 U.S.C. § 103. The

examiner relies on Chamberlain, Ellinger and Girvin to reject claims 11 through 14 under 35 U.S.C. § 103.

The claimed subject matter is directed to a process for removing a contaminating amount of molecular iodine values from an aqueous solution of alkali metal chloride containing the same. See claim 15. The process involves "adsorbing such molecular iodine values onto active carbon, the external surface area of said active carbon having been oxidized." *Id.* Prior to the absorption, the iodine values of the aqueous solution of alkali metal chloride are converted into molecular iodine values by oxidizing them with an oxidizing agent, such as chlorine, at a PH lower than 3. See claims 1 and 19. The rate of addition of the oxidizing agent is adjusted based on the measured redox potential of the aqueous solution to obtain conversion of the iodine values to the molecular iodine values. See claim 19. The resulting purified aqueous solution of alkali metal chloride has "from 0.2 to 0.5 mg/l of iodine values, preferably less than 0.5 mg/l of iodine values." See claims 9 and 18. The molecular iodine values are recovered (desorbed) from the active carbon with a solvent

so that the active carbon can be regenerated. See claims 10 and 11.

We find that Chamberlain describes a process for the extraction and recovery of iodine from an aqueous solution of alkali metal chloride (brine) containing the same. See column 1, lines 1-4. The process involves acidifying the solution to place its pH at approximately three, converting the iodine content in the solution into molecular iodine (free state), removing molecular iodine from the solution via absorption with a suitable absorbent material and recovering iodine from the absorbent material. See column 1, lines 5-9, column 3, lines 12-22. The adsorbent material employed is active charcoal, including "such equivalent forms of activated carbon, whether prepared from wood or shell chars, from coal, or in any other way." See column 3, lines 22-29 and column 4, lines 126-133.

With respect to claims 1 through 6, 8, 10, 15 through 17 and 20, appellant only argues that Chamberlain does not employ an active carbon having the oxidized external surface. As indicated *supra*, Chamberlain does not mention its active carbon or active charcoal as having the oxidized external

surface. According to Kirk-Othmer (page 562), however, it is well known that the external surface area of active carbon is inherently oxidized. We find that Kirk-Othmer specifically states (page 562) that:

Processes involving selective oxidation of the raw material with air or gases are also used to make both decolorizing- and gas-adsorbing carbons. In both instances, the raw material is activated in granular form. The raw material is carbonized first at 400-500°C to eliminate the bulk of the volatile matter and then oxidized with gas at 800-1000°C to develop the porosity and surface area.

To the extent that the external surface of the active carbon described in Chamberlain may not necessarily be oxidized, we find that Kirk-Othmer provides ample motivation to oxidize the external surface of an active carbon with a chemical or an oxidizing gas to modify its adsorptive characteristics. See pages 561 and 562. Kirk-Othmer specifically teaches (page 561) that:

The most important chemical properties of activated carbon are the ash content, ash composition, and pH of the carbon. Discrepancies between the expected performance of an activated carbon, based upon surface area and pore-size distribution data, an actual adsorptive capacity can often be explained by oxygen-containing groups on the surfaces of the carbon. The pH or  $pK_a$  of the carbon, as a measure of

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surface acidity or basicity of the oxygen-containing groups, assists in predicting hydrophilicity and anionic or cationic adsorptive preferences of the carbon...

Thus, it would have been obvious to employ an active carbon having the oxidized external surface in the process of Chamberlain to optimize the absorption of molecular iodine.

Similarly, we determine that Urbain alone describes or would have rendered the subject matter defined by claims 1 through 6, 8, 10, 15-17 and 20 obvious under 35 U.S.C. § 103. We find Urbain describes employing an active carbon saturated with chlorine to adsorb elemental iodine from a solution containing the same (an aqueous solution containing an alkali metal chloride, such as sea water). According to page 5 of the specification, the surface of the active carbon is oxidized by chlorination. While we appreciate the fact that the examiner describes the rejection in terms of obviousness rather than lack of novelty, we note that lack of novelty is the epitome of obviousness. ***See In re Fracalossi***, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982).

With respect to claims 9 and 18, appellant argues that neither Chamberlain nor Urbain describes or would have

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suggested the recovery of a purified aqueous solution of alkali metal chloride comprising from 0.2 to 0.5 mg/l, or less than 0.05 mg/l of iodine values. We do not agree. First, Chamberlain clearly teaches that its active carbon causes complete adsorption or substantially complete adsorption of the iodine in aqueous solutions containing an alkali metal chloride. See column 3, lines 22-44. In other words, the resulting iodine removed aqueous solution containing an alkali metal chloride is either free of or substantially free of iodine values. Thus, it can be inferred from this teaching that Chamberlain desires to obtain those aqueous solutions having the claimed amount of iodine values. Second, the amount of iodine remaining in the aqueous solution is a function of the amount of iodine values recovered via active carbon from the aqueous solutions. Since the purpose of both Chamberlain and Urbain is to recover most, if not all, iodine values in those aqueous solutions, we determine that carrying out the adsorption until all or most of the iodine values in the aqueous solutions are adsorbed onto active carbon, thus recovering the aqueous solutions having a little or no amount

of iodine values as claimed, would have been obvious to one of ordinary skill in the art.

With respect to claim 22, appellant argues that Chamberlain teaches away from absorbing iodine onto active carbon at 50°C. or less. See Brief, page 12. In support of his position, appellant, refers to example 1 of Chamberlain which, according to appellant employs at least 100°C. *Id.* However, Chamberlain does not describe using "at least 100°C." as the iodine absorbing temperature for its process. It uses such high temperature only to desorb iodine absorbed in the active carbon. Since appellant has admitted that it is known to those skilled in the art that the claimed temperature is useful for absorbing iodine in an aqueous solution containing an alkali metal chloride onto active carbon (Brief, page 4), we determine that it would have been obvious to use the claimed temperature as the iodine absorbing temperature of the process described in Chamberlain and Urbain.

Appellant argues (Brief, page 13) that

claims 11-14 are separately patentable since the claims recitations regarding regeneration of active carbon are not disclosed or suggested by Chamberlain or Urbain...

Appellant, however, does not dispute the examiner's finding that Ellinger and/or Girvin provide ample suggestion to employ the claimed regeneration step in the process of Chamberlain.

**Id.** Accordingly, we conclude that the use of the regeneration technique described in Girvin or Ellinger as the regeneration step of Chamberlain's process would have been obvious to one of ordinary skill in the art.

Appellant argues (Brief, page 14) that

claims 19 and 21 are separately patentable since neither Chamberlain or [sic, nor] Urbain et al contain [sic, contains] any information regarding, for example, the oxidation of iodine is performed at a redox potential from 460 to 560 mV/SCE, measured at 50°C.

Appellant, however, does not dispute the examiner's finding that Filippone would have suggested the utilization of its measuring

step to control the rate of addition of chlorine (oxidizing agent) in the process of Chamberlain. Nor does appellant dispute the examiner's finding that the formation of molecular iodine taught by the applied prior art necessarily indicates the obtention of the claimed redox potential. Finally,



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appellant does not dispute the examiner's finding that the claimed flow rate is a known result effective variable.

Given these undisputed facts, we agree with the examiner's conclusion that the subject matter of claims 19 and 20 would have been obvious to one of ordinary skill in the art in view of the applied prior art references.

On this record, for the reasons indicated *supra*, we agree with the examiner that the claimed subject matter as a whole would have been obvious to one ordinary skill in the art within the meaning of 35 U.S.C. § 103. Accordingly, we affirm the examiner's decision rejecting all of the appealed claims under 35 U.S.C. § 103 over the applied prior art. However, since our reasons for affirming the examiner's § 103 rejections are not only materially different from those offered by the examiner, but also rely on Kirk-Othmer for the first time, we denominate our affirmance as including new grounds of rejection.

CONCLUSION

In summary, we affirm the examiner's decision

(1) rejecting claim 22 under 35 U.S.C. § 112, first paragraph, as lacking written descriptive support in the original disclosure for the subject matter presently claimed; and

(2) rejecting all of the appealed claims under 35 U.S.C. § 103 as unpatentable over the applied prior art.

Therefore, the decision of the examiner is affirmed and our affirmance of the examiner's § 103 rejection is denominated as including new grounds of rejection.

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b) (amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53131, 53197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. Office 63, 122 (Oct. 21, 1997)). 37 CFR

§ 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

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(b) Appellant may file a single request for rehearing within two months from the date of the original decision . . . .

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (37 CFR § 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

Should the appellant elect to prosecute further before the Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

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If the appellant elects prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED/37 CFR § 1.196(b)

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
CHUNG K. PAK	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
THOMAS A. WALTZ	)	

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Administrative Patent Judge     )

CKP:lp

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NORMAN H STEPNO  
BURNS DOANE SWECKER & MATHIS  
PO BOX 1404  
ALEXANDRIA VA 22313-1404

***Leticia***

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APJ PAK

APJ WALTZ

APJ KIMLIN

DECISION: AFFIRMED/196 (b)

Send Reference(s): Yes No  
or Translation (s)

Panel Change: Yes No

Index Sheet-2901 Rejection(s):

Prepared: January 14, 2002

Draft                  Final

3 MEM. CONF.    Y                  N

OB/HD                  GAU

PALM / ACTS 2 / BOOK

DISK (FOIA) / REPORT